

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN**

U.S. WATER SERVICES, INC. and
ROY JOHNSON,

Plaintiffs,

v.

NOVOZYMES A/S and NOVOZYMES NORTH
AMERICA, INC.,

Defendants.

Case No. 3:13-cv-00864-jdp

**NOVOZYMES' RENEWED MOTION UNDER RULE 50(b) FOR JUDGMENT AS A
MATTER OF LAW OF LIMITED DAMAGES OR, IN THE ALTERNATIVE, UNDER
RULE 59 FOR A NEW TRIAL OR REMITTITUR OF DAMAGES**

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I. INTRODUCTION

Pursuant to Federal Rule of Civil Procedure 50(b), defendants Novozymes A/S and Novozymes North America, Inc. (collectively, “Novozymes”) seek judgment as a matter of law limiting damages to a reasonable royalty rate of 7%.¹ In the alternative, Novozymes moves for a new trial on the issue of damages under Federal Rule of Civil Procedure 59.

Assuming the jury’s liability verdict is not disturbed, judgment as a matter of law in Novozymes’ favor is appropriate because the jury’s award of over \$7.5 million is not a reasonable royalty for use of the claimed invention.

Alternatively, a new trial should be granted on damages because the admission of Mr. Bero’s opinion testimony so distorted the framework for assessing a royalty for use of the asserted patents that the jury’s damages award—a stunning 80% of Novozymes’ Phytaflow[®] revenues—is untethered to any evidence of the value of the claimed invention and exceeds the only comparable licenses in evidence by a factor of 40. A new trial that excludes such testimony should be ordered unless U.S. Water agrees to a remittitur.

II. NOVOZYMES IS ENTITLED TO JUDGMENT AS A MATTER OF LAW LIMITING DAMAGES

A. Legal Standard for Judgment as a Matter of Law

In resolving a motion for judgment as a matter of law under Rule 50(b), the “court must determine whether the jury had a legally sufficient evidentiary basis for the verdict it reached.” *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 76 F. Supp. 3d 806, 812 (W.D. Wis. 2014); *see also Tate v. Executive Mgmt. Servs., Inc.*, 546 F.3d 528, 531–33 (7th Cir. 2008) (in reversing district court’s denial of Rule 50(b) motion, observing that a jury verdict will be overturned

¹ See Dkt. No. 807, Novozymes’ Rule 50(a) Motion for Judgment of No Willful Infringement and Limited Damages as a Matter of Law.

where “no rational jury could have found for the” nonmoving party). In so doing, the court must “construe the facts strictly in favor of the party that prevailed at trial, including by drawing all reasonable inferences in that party’s favor and disregarding all evidence favorable to the moving party that the jury is not required to believe.” *Douglas Dynamics*, 76 F. Supp. 3d at 812 (internal quotations and citations omitted). The court “does not make credibility determinations or weigh the evidence,” but “must assure that more than a mere scintilla of evidence supports the verdict.” *Wis. Alumni Research Found. v. Apple, Inc.*, ___ F. Supp. 3d ___, 2017 WL 2438832, at *2 (W.D. Wis. June 6, 2017); *see also Mut. Serv. Cas. Ins. Co. v. Elizabeth State Bank*, 265 F.3d 601, 612 (7th Cir. 2001) (holding that to survive a Rule 50 motion, there must be “substantial evidence—more than a mere scintilla—that would have permitted the jury to find in the [nonmoving party]’s favor”).

Although a reasonable royalty analysis “necessarily involves an element of approximation and uncertainty,” on a post-trial motion for judgment as a matter of law, the court is still required to “scrutinize the evidence carefully to ensure that the ‘substantial evidence’ standard is satisfied.” *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 26 (Fed. Cir. 2012) (quoting *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1336 (Fed. Cir. 2009)). A jury’s damages award “must be supported by *relevant* evidence.” *Unisplay, S.A. v. Am. Elec. Sign Co., Inc.*, 69 F.3d 512, 517 (Fed. Cir. 1995) (emphasis added). Accordingly, expert testimony on damages that is “conclusory, speculative and, . . . out of line with economic reality” cannot provide the “substantial evidence” required to sustain a jury’s damages award. *Whitserve*, 694 F.3d at 32–33; *see also LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 81 (Fed. Cir. 2012) (“When an expert opinion is not supported by sufficient facts to validate it in the eyes of the law, or when indisputable record facts contradict or otherwise render

the opinion unreasonable, it cannot support a jury's verdict." (quoting *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 242 (1993)).

B. Damages Should Be Limited to a Royalty That Does Not Exceed 7% of Net Revenue of Phytaflow

U.S. Water bore the burden of proving damages. Yet the testimony of its expert, Richard Bero, fell short of providing a reliable foundation on which the jury could assess any damages in this case. After making a number of faulty assumptions and overlooking contrary evidence, Mr. Bero testified that in a hypothetical, arms-length negotiation, U.S. Water and Novozymes would have agreed to a reasonable royalty of \$8.00 per pound of Novozymes' Phytaflow sold, or nearly \$12 million.² This amount was more than Novozymes' *total revenue for all sales* of Phytaflow during the damages period and represented an effective royalty rate of 127% of revenue. In contrast, Novozymes' damages expert, Julie Davis, applied the correct legal framework and concluded from U.S. Water's own evidence that a royalty rate of 7% of revenue of the accused Phytaflow products is reasonable compensation for use of the claimed invention.

The jury's damages verdict of \$7,582,966, which did not specify the base or rate the jury used to calculate the amount of damages,³ represents an effective royalty rate of more than 80% of Novozymes' revenue on sales of Phytaflow. While the jury did not adopt Mr. Bero's damages calculation entirely, the verdict was clearly skewed by the opinions he was permitted to offer at trial. These opinions were based on an improper methodology.

² Prior to product launch, Phytaflow was known as Novozym[®] 50161. This motion refers to both as "Phytaflow."

³ Novozymes asked that the verdict form include an interrogatory asking the jury to indicate the base and rate used to calculate damages, but the Court declined to include such an interrogatory. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 192:9–193:3.

1. Mr. Bero's Expert Opinion Was Based on an Unreliable Methodology and Cannot Support the Unreasonable Royalty the Jury Awarded

U.S. Water relied heavily on the testimony of Mr. Bero for its claim that a reasonable royalty should be calculated at a rate of \$8.00 per pound of Phytaflow sold, or nearly \$12 million. *See* Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 5–11 (Bero); Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 101:20–25 (closing argument). Mr. Bero's testimony was based on an unreliable methodology and cannot support the jury's award as a matter of law.

a. Mr. Bero's "Reasonable Royalty" Was an Unsupported Claim for Lost Profits

Mr. Bero's "reasonable royalty" opinion was, in fact, a "lost profits" demand in disguise. Although he purported to offer an analysis modeled on the *Georgia-Pacific* royalty framework, his analysis was largely dictated by the "starting point royalty rate range" he chose at the outset. That range was defined on the low end by effectively the *entire amount* of Novozymes' profits on sales of Phytaflow, and at the high end by the *entire amount* of U.S. Water's hoped-for profits on sales of pHytOUT. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 32:6–11, 53:23–54:5, 54:8–18. In explaining this starting point range, Mr. Bero stated that U.S. Water would have expected to lose profits on pHytOUT if it licensed the asserted patents to Novozymes, and therefore would have demanded a royalty higher than Novozymes' revenue on Phytaflow to recoup those lost profits. *Id.* at 10:12–14.

Mr. Bero acknowledged that his starting point range attributes the *entire value* of U.S. Water's pHytOUT product offering to the patented method. He then assumed that U.S. Water would have made *all* of the sales Novozymes made of Phytaflow of U.S. Water's much higher pre-competition selling price, and that U.S. Water would have made *profits* on those sales that exceeded Novozymes' actual *selling price* for Phytaflow. *See id.* at 56:2–14 (Mr. Bero attributed "the vast majority" of U.S. Water's profits on pHytOUT "to the patented methods and not to

other things”); *id.* at 83:14–21 (stating his view that for every Novozymes sale, “the sale would represent a likely sale that U.S. Water would make”); *id.* at 84:8–11 (stating that U.S. Water “would have expected to likely make the sales of those that were otherwise made by the infringing product”). Mr. Bero took this “lost profits” number, cast it as an “expectation” of U.S. Water, and defined it as a “starting point” for the hypothetical negotiation. *Id.* at 41:11–21 (“I use that \$5 to \$10 per-pound range to start my negotiation.”); *id.* at 35:11–12 (explaining that “[t]he income approach looks at the expected profitability associated with the asset”). He then assumed that Novozymes would expect to give up all (or nearly all) of its profits on Phytaflow, and set Novozymes’ disgorgement of profits as the minimum “starting point” for the hypothetical negotiation. *Id.* at 54:8–18. This methodology has no support in the law or in sound economic analysis.

A patentee’s compensatory damages for infringement typically are measured by one of two methods: lost profits or reasonable royalty. *Lucent Techs.*, 580 F.3d at 1324. Lost profits is a measure of a competitor’s “sales and profits lost to the patentee because of the infringement.” *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1545 (Fed. Cir. 1995). By contrast, a reasonable royalty is a measure of what the patentee “would have received through arms-length bargaining” for a license to use the claimed invention. *Lucent Techs.*, 580 F.3d at 1324.

A reasonable royalty is calculated based on a hypothetical negotiation for a license to the patented invention between the patentee and the infringer at the time of first infringement. *See ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 868 (Fed. Cir. 2010). The hypothetical negotiation “attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began.” *Lucent Techs.*, 580 F.3d at 1324. To recover lost profits based on lost sales, on the other hand, a patentee must show not

what the parties would have agreed to, but instead must show that it lost sales and that the loss was caused by the infringer—i.e., that *but for* the infringement, the patentee would have made the infringer’s sales. *Rite-Hite*, 56 F.3d at 1545; *see also Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978) (reciting four-factor test for lost profits); *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1349 (Fed. Cir. 1999) (“To recover lost profits, the patent owner must show ‘causation in fact,’ establishing that ‘but for’ the infringement, he would have made additional profits.”). For this reason, lost profits typically are more difficult to prove than reasonable royalty damages. *See Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1290 (Fed. Cir. 2011).

Mr. Bero did not do a lost profits analysis. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 53:7–18. By framing his opinion as a “reasonable royalty” analysis, Mr. Bero avoided the rigorous economic and legal standards of proof required for lost profits. For example, had Mr. Bero attempted to demonstrate that U.S. Water actually lost profits based on Novozymes’ sales of Phytaflow, he would have first had to show that demand for the patented method, as opposed to other considerations, drives demand for Phytaflow and pHytOUT. *See Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1264 (Fed. Cir. 2013) (the required “but for” causation is established by “the four-factor *Panduit* test”). He also would have had to provide an economic analysis of the market, including the likelihood that U.S. Water could have continued to sell pHytOUT at its higher prices to Novozymes’ customers who had been paying significantly less per pound for Phytaflow. *See id.*

Mr. Bero did not do any analysis to determine what actually drives demand for Phytaflow or pHytOUT, although there were many such factors to consider. *See infra* § II.B.1.b. Instead, he simply assumed that the entire value of both products was attributable to the patented method.

Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 31:7–12, 54:19–55:1, 56:2–11. He performed no analysis of the alternatives on the market. *Id.* at 79:11–21. He did not account for price sensitivity or price elasticity, but instead assumed that price was perfectly inelastic. *Id.* at 75:24–76:5. He admitted that he could not show that *but for* a sale of Phytaflow by Novozymes, U.S. Water would have sold the same amount of pHytOUT at U.S. Water’s preferred higher price. *See id.* at 63:7–15, 83:14–84:11.

Mr. Bero relied for his royalty calculation on U.S. Water’s *expectation* that it was entitled to, and, but for Novozymes’ sales of Phytaflow, could in fact have made, its hoped-for profits on sales of pHytOUT. Accordingly he set a starting point royalty range that assumed U.S. Water would license the asserted patents to Novozymes at a rate premised on recouping those foregone profits. In other words, Mr. Bero simply *assumed* as an “expectation of the parties” what a lost profits analysis would have required him to *prove*.⁴ *See id.* at 62:4–15 (“[W]hen you have this hypothetical negotiation, the expectation of U.S. Water as being the only other alternative standalone phytase supplier, they will be expecting that they – well, they would know they earn about 10 bucks a pound and they would be expecting that if they licensed out to a direct competitor that they would be likely losing profits on the product, which equates to \$10 per pound.”). Mr. Bero’s decision to forego the rigorous analysis required by the Federal Circuit for a claim of damages based on lost profits completely undermines the validity of his royalty

⁴ This is not the first occasion on which Mr. Bero has attempted to use the reasonable royalty framework to capture lost profits for a patent infringement plaintiff, without doing a real lost profits analysis. In *Sloan Valve Co. v. Zurn Indus., Inc.*, the Court rejected Mr. Bero’s virtually identical analysis in which, “[d]espite acknowledging that lost profits were not available” during the damages period, Mr. Bero “still attempts to include lost profits by incorporating them in his reasonable royalty calculation.” 33 F. Supp. 3d 984, 1001 (N.D. Ill. 2014) (finding testimony by Mr. Bero was unreliable and inadmissible).

methodology, which relies on U.S. Water's supposed lost profits to define one end of his "starting point royalty range" and disgorgement of Novozymes' profits to define the other.

b. Mr. Bero Failed to Apportion the Value of the Patented Method from the Value of the Unpatented Features of pHytOUT and Phytaflow

Mr. Bero failed to apportion the value of the patented method from the value of unpatented features. At trial, he claimed to have relied on the "income approach" to assess the value of the patented method as a "starting point," but his testimony reflects that he did no such thing.

First, the "income approach," correctly applied, focuses on the profits that use of the patented technology creates for the accused *infringer*, not the patentee. *See, e.g., Ultratec, Inc. v. Sorenson Commc'ns, Inc.*, No. 13-cv-346-BBC, 2014 WL 5080411, at *4 (W.D. Wis. Oct. 9, 2014) (collecting cases regarding "the analytical or income approach," and noting that "in those cases, the experts compared the *infringer's* profits without infringement to the *infringer's* profits with infringement" (emphases added)). However, Mr. Bero used all of *U.S. Water's* (the patentee's) profits on pHytOUT (the patentee's product) to define the high end of the "starting point royalty range" that U.S. Water would expect to make for every infringing sale of Phytaflow by Novozymes. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 54:1–7. He did not attempt to assess the incremental profit, if any, that *Novozymes* (the accused infringer) enjoyed from use of the patented technology.

Second, even assuming application of the "income approach" to U.S. Water's products could yield relevant information, Mr. Bero did not correctly apply the "income approach" methodology. Instead of comparing pHytOUT profits to the profits of other products that differ from pHytOUT *only* with respect to the patented technology, Mr. Bero compared pHytOUT products to the average profits of all products offered by U.S. Water's EPT group, regardless of

how those products otherwise compare to pHytOUT. *Id.* at 88:23–89:18. For example, he admitted that, unlike pHytOUT, none of the other EPT products were enzyme products, and that he did not consider whether any were as service-intensive as pHytOUT. *Id.* at 87:7–88:12; *see* Dkt. No. 808, Bly 30(b)(6) Dep. Tr. at 244:23–255:5 (testifying that pHytOUT has proved to be a “service-intensive product”). This misapplication of the “income approach” methodology resulted in a grossly overstated range of value attributable to the patented method.

Mr. Bero did not otherwise apportion any of the profits he used to define the “starting point royalty range” to separate value attributable to the patented method from the value of other, unpatented aspects of pHytOUT and/or Phytaflow, such as the phytase enzyme itself, the value of the services provided with the products, or the value of other intellectual property embodied in the products. This failure to apportion alone renders Mr. Bero’s testimony unreliable. *See LaserDynamics*, 694 F.3d 51 at 67 (explaining that patent damages must be apportioned to avoid the “considerable risk that the patentee will be improperly compensated for non-infringing features of [a] product”); *Virnetx, Inc. v. Cisco Systems, Inc.*, 767 F.3d 1308, 1329 (Fed. Cir. 2014) (finding that a damages expert’s testimony “was inadmissible and should have been excluded” for failure to apportion value only to the patented technology).

It is evident from U.S. Water’s own conduct that the selling price of pHytOUT, for example, cannot be attributed solely to the patented method. For many years, U.S. Water required fuel ethanol plants to sign a written supply agreement to obtain pHytOUT. *E.g.*, DTX 2475. Under these supply agreements, a customer received more than simply the right to use the patented method. Specifically, the selling price for pHytOUT included “payments for the

Chemical, Invention, and USWS Services.”⁵ See *id.* at 005 (emphases added). Only the “Invention” component of the selling price included a license to use the asserted patents, and that license encompassed at least one other unasserted patent as well as U.S. Water’s trade secrets. *Id.* at 003–004; see also Dkt. No. 818, Trial Tr. (Oct. 19, 2017 a.m.) at 46:17–21, 73:2–19 (U.S. Water’s former CEO, Mr. Bly, testifying that U.S. Water continues to provide the services listed in the supply agreements to current pHytOUT customers).

Mr. Bero did not apportion these unpatented items—the phytase product formulation, services, other patents, and trade secrets—from the patented method. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 56:12–14, 56:20–22, 58:7–23. He simply assumed, for purposes of his analysis, that these unpatented items have little or no value. *Id.* at 58:24–59:21. When pressed regarding apportionment, he protested that “I didn’t go out and specifically try to apportion to every little piece of the pie, but I apportioned to the patented technology.” *Id.* at 60:24–61:2. His assertion, however, is belied by what he actually did. When asked to specifically explain his apportionment, Mr. Bero admitted that he did nothing initially to segregate the value of the patented method from unpatented aspects of the phytase product offerings of either party, but instead started with a “range” of values and then “ended up at [\$]8” as a result of applying the *Georgia-Pacific* factors, which he then claimed reflected “the amount apportioned to the patented technology.” *Id.* at 61:16–22. As explained above, this initial “range” was defined on

⁵ “Invention” was defined as including rights to certain patents—including the not-yet-issued ’137 and ’399 patents—and “Know-How,” which was in turn defined as including “trade secrets” and “chemical formulations, test procedures and other information owned or controlled by” U.S. Water. DTX 2475 at 003. “Chemical” was defined as the (unpatented) pHytOUT product itself. *Id.* “USWS Services” were itemized in an appendix to the agreement, and included “pHytOUT® technology training,” “review of alternative pHytOUT® chemistries,” “regular inventory reconciliation,” “chemical storage methods,” “fermentation data analyses,” “process unit operational review & recommendations,” and “semi-annual business reviews.” *Id.* at 012; see also PTX 599 (additional U.S. Water supply agreement).

one end by Novozymes' profits on Phytaflow and on the other end by U.S. Water's profits on pHytOUT; the \$8.00 per pound was arbitrarily chosen at a point towards the upper end of the range. *This is not apportionment.*

Apportionment requires that a patentee "must in every case give evidence tending to separate or apportion the defendant's profits and the patentee's damages between the patented features." *Garretson v. Clark*, 111 U.S. 120, 121 (1884). As the Supreme Court explained, "[w]hen a patent is for an improvement, and not for an entirely new machine or contrivance, the patentee must show in what particulars his improvement has *added to the usefulness* of the machine or contrivance." *Garretson*, 111 U.S. at 121 (emphases added); *see also Rembrandt Social Media, LP v. Facebook, Inc.*, 22 F. Supp. 3d 585, 594–95 (E.D. Va. 2013) (excluding testimony because expert failed to apportion to account for just the value of the patented method and no other features of the accused product, and recognizing that "an apportionment including value attributable to more features than just the improvement overcompensates the patentee."). Such evidence must be "reliable and tangible," not "conjectural or speculative." *Garretson*, 111 U.S. at 121. Apportionment can be performed in "various ways," such as by limiting the royalty base "to reflect the value added by the patented feature" or by "discount[ing] the value of a product's non-patented features." *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226 (Fed. Cir. 2014) (citing *Garretson*). However, the "essential requirement is that the ultimate reasonable royalty award must be based on the incremental value that the patented invention adds to the end product." *Id.*

Under these controlling principles, Mr. Bero's analysis cannot support the jury's damages award. Mr. Bero began with a "starting point royalty range" that reflected no apportionment whatsoever of the aspects of the pHytOUT or Phytaflow product offerings related to the patented

methods. In fact, his starting range assigns a value of *zero* to all non-patented aspects of pHyTOUT and Phytaflow (even though it was not disputed that such non-patented aspects exist), and instead incorrectly assumes that *all* profits are attributable to *only* to the patented methods. He also failed to consider the “incremental value” of the patented methods, which are, at best, merely an improvement to the prior art. In other words, Mr. Bero’s “apportionment” was no apportionment at all. *See Ericsson*, 773 F.3d at 1226.

Nor is Mr. Bero’s analysis made reliable by the fact that he split the difference between U.S. Water’s and Novozymes’ profits and ultimately “ended up at [\$]8.” Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) 51:2–8, 61:16–22. This analysis falls far short of the “reliable and tangible” evidence needed to demonstrate proper apportionment. *See Ericsson*, 773 F.3d at 1226; *see also LaserDynamics*, 694 F.3d at 69 (finding that an expert’s apportionment analysis “appears to have been plucked out of thin air based on vague qualitative notions of the relative importance of the [patented] technology,” and “would alone justify excluding [his] opinions”). As Mr. Bero failed to carefully apportion damages to the value of the claimed invention, his opinions cannot support the jury verdict.

c. Mr. Bero’s Royalty Rate Was Unsupported by Substantial Evidence and Was Grossly Excessive

The jury’s damages verdict is grossly excessive for at least two reasons. First, the jury’s verdict was necessarily influenced by Mr. Bero’s testimony that a *minimum* royalty (the low end of the “starting point royalty range”) would require Novozymes to disgorge all of its profits on Phytaflow sales. Disgorgement is not a permissible remedy for patent infringement. *Robert Bosch, LLC v. Pylon Mfg. Corp.*, 719 F.3d 1305, 1315–16 (Fed. Cir. 2013) (observing that “Congress eliminated recovery of an adjudged infringer’s profits” as a remedy for patent infringement in 1946, and explaining that “in a modern damages trial,” it is appropriate to

determine “a patentee’s damages including lost profits or a reasonable royalty, but not . . . an adjudged infringer’s profits” (citation omitted)). Nor is there any evidence that Novozymes considered disgorgement of its profits a reasonable “starting point” for the hypothetical negotiation.

Second, it is *not* reasonable to conclude, as Mr. Bero did, that in this case a hypothetical negotiation would result in a royalty rate that leaves Novozymes with no profit at all (let alone a loss), and Mr. Bero relied on no facts to support such a royalty, save for *U.S. Water’s* purported “expectations.” See *Lindemann Maschinenfabrik GmbH v. Am. Hoist & Derrick Co.*, 895 F.2d 1403, 1408 (Fed. Cir. 1990) (finding that the opinion of patentee’s damages expert that the accused infringer “‘would agree to pay a royalty in excess of what it expected to make in profit’ was, in light of all the evidence in this case, absurd”); *Hughes Tool Co. v. Dresser Indus., Inc.*, 816 F.2d 1549, 1558 (Fed. Cir. 1987) (reversing a reasonable royalty award of 25% as arbitrary, in part because that rate did not leave the infringer with “a reasonable profit”); see also *Mobil Oil Corp. v. Amoco Chems. Corp.*, 915 F. Supp. 1333, 1365–66 (D. Del. 1994) (finding a patentee’s damages theory “unsound” where it sought a royalty in excess of the defendant’s entire profit during the damages period, as such an analysis “does not pass the reality test”). Such a royalty is permissible only if, at the time of the hypothetical negotiation, *Novozymes* expected significantly greater profits from use of the patent methods than it actually received. See *Rite-Hite*, 56 F.3d at 1577 (Nies, Archer, Smith, & Mayer, JJ., dissenting-in-part) (“Although this court has sanctioned royalty awards that exceeded the infringer’s actual net profits, we have done so only when there was evidence that the infringer actually anticipated greater net profits.” (collecting cases)). There was no such evidence.

Mr. Bero himself conceded that it would be uncommon for a licensee to agree to a royalty greater than the average selling price of its product, and yet he testified at trial that just such a royalty was “reasonable.” Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 52:21–53:6. Mr. Bero’s royalty rate of \$8.00 per pound was grossly excessive, and his testimony to that effect skewed the jury’s verdict in the direction he advocated. *See LaserDynamics*, 694 F.3d at 68 (observing that disclosure to the jury of over-inclusive royalty base “cannot help but skew the damages horizon for the jury”).

d. Mr. Bero Failed to Account for Price Elasticity and Price Sensitivity of Customers

As explained above, Mr. Bero assumed that U.S. Water would have made all of Novozymes’ sales of Phytaflow at U.S. Water’s selling price, even though that selling price was more than twice Novozymes’. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 51:18–22, 83:14–21, 84:5–11. But Mr. Bero conceded that he did not do a price sensitivity or price elasticity analysis. *Id.* at 76:4–5. These failures render his analysis unreliable. *See Crystal Semiconductor Corp. v. TriTech Microelectronics Int’l, Inc.*, 246 F.3d 1336, 1357 (Fed. Cir. 2001) (“[I]n a credible economic analysis, the patentee cannot show entitlement to a higher price divorced from the effect of that higher price on demand for the product.”).

When a patentee asserts it would have charged a higher price, and demands damages to make up for that difference in price, a damages expert must provide economically sound evidence of the impact that price increase would have on the number of sales it would have expected to make. *See id.* at 1359–60 (requiring evidence sufficient “to show the reaction of the market if, ‘but for’ infringement, [the patentee] would have tried to charge at least 89¢ more” as well as “evidence of how a hypothetical increase in price would have affected [patentee’s] profits due to lost sales,” and holding that “[t]o show causation with reliable evidence, a patentee must

produce credible economic evidence to show the decrease in sales, if any, that would have occurred at the higher hypothetical price”); *TV Interactive Data Corp. v. Sony Corp.*, 929 F. Supp. 2d 1006, 1027 (N.D. Cal. 2013) (interpreting *Crystal Semiconductor* to “require[] a price elasticity analysis when a patent holder seeks to collect damages on a price erosion theory”). A credible analysis must at least explain why the market is inelastic, which the Federal Circuit has cautioned is “very rare.” *Crystal Semiconductor*, 246 F.3d at 1359; accord *Ericsson v. Harris*, 352 F.3d 1369, 1378 (Fed. Cir. 2003). An example of the rare instance where an inelastic market may occur is where “substitution of a product [is] impossible and the product [is] a necessity.” *Crystal Semiconductor*, 246 F.3d at 1359.

Mr. Bero failed to perform such a price elasticity analysis. Indeed, he acknowledged that *there is uncertainty associated with the price customers would be willing to pay* in excess of what they were paying for Phytaflow. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 75:18–21, 75:24–76:1, 76:4–5, 84:12–19. Specifically, he conceded that if Novozymes were to raise its prices to support the royalty Mr. Bero contends is “reasonable,” “[p]erhaps some of those sales would have otherwise diminished We don’t know that for sure.” *Id.* at 85:22–86:9. He also testified that he did not have, and did not consider, any evidence showing that Novozymes’ customers would have been willing to pay higher prices, let alone the higher prices U.S. Water wanted to charge. *Id.* at 86:8–15.

This is not one of those “rare” inelastic markets where the accused product is a necessity and cannot be substituted for another. *See Crystal Semiconductor*, 246 F.3d at 1359. About half of fuel ethanol plants use neither pHytOUT nor Phytaflow. *See* Dkt. No. 823, Trial Tr. (Oct. 13, 2017 a.m.) at 143:3–14 (Rogers) (approximately 200 fuel ethanol plants in the United States); Dkt. No. 809, Pasko Dep. Tr. at 227:17–228:22 (U.S. Water has had about 50 “steady state”

users of pHytOUT); Dkt. No. 819, Trial Tr. at 49:1–10 (Oct. 20, 2017) (Davis) (Novozymes has had 57 total Phytaflow customers). The evidence at trial established that as of 2014, these plants either used blended products containing phytase (provided by Genencor / DuPont), or no phytase at all. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 63:1–15 (Bly) (“U.S. Water did lose sales of its pHytOUT product to Dupont”); Dkt. No. 833, Trial Tr. (Oct. 17, 2017 a.m.) at 152:15–24 (Flanagan) (admitting that sulfuric acid and cleaning in place still remain options to reduce fouling); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 65:12–16 (Kohl) (one of the three White Energy fuel ethanol plants does not use phytase); Dkt. No. 804, Rogers Dep. Tr. at 91:9–16 (describing the use of other enzymes or sulfuric acid, adjusted cleaning cycles, and mechanical solutions).

Mr. Bero’s assumption that U.S. Water could have made all of Novozymes’ Phytaflow sales while still charging much higher prices for pHytOUT is at odds with the undisputed evidence of the fuel ethanol industry’s response to U.S. Water’s product offering during the approximately three years that U.S. Water was offering a phytase and Novozymes was not. Ms. Davis testified without contradiction that of Novozymes’ 57 Phytaflow customers, 44 had never purchased pHytOUT from U.S. Water and 25 of those had never even trialed pHytOUT. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 48:24–49:10. Mr. Bero did not account for this evidence.

Both Mr. Bly and one of U.S. Water’s technical experts, Mr. Dorn, testified that the fuel ethanol market is highly price-sensitive. Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 75:11–15 (Mr. Dorn characterizing the market as “very competitive” and stating that customers are “constantly trying to . . . reduce costs”); Dkt. No. 818, Trial Tr. (Oct. 19, 2017 a.m.) at 73:20–21 (Mr. Bly testifying that customers are sensitive to price); *see also* Dkt. No. 809, Pasko Dep. Tr. at 107:1–108:14 (testifying that customers would not buy if the return on investment was not

compelling enough); *id.* at 246:9–12 (testifying that customers complained U.S. Water’s prices were too high). Mr. Bero’s assumption that *all* of Novozymes’ customers would be willing to pay a significantly higher price for a phytase product is contrary to the evidence. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 86:12–15. Indeed, Mr. Bero conceded that it would be unreasonable to expect U.S. Water would have made its pre-dispute profits on sales to customers that had been paying less than that for Novozymes’ Phytaflow. *Id.* at 84:20–85:1.

To justify the kinds of assumptions Mr. Bero made, even for a reasonable royalty analysis, U.S. Water needed to present evidence of the effect of its higher price on the demand for the product. *Crystal Semiconductor*, 246 F.3d at 1357 (explaining that “in a credible economic analysis, the patentee cannot show entitlement to a higher price divorced from the effect of that higher price on demand for the product”). There is no such evidence in the record. As the assumptions on which Mr. Bero premised his royalty analysis are not reasonable and are not supported by any credible economic analysis, the jury’s verdict cannot stand.

e. Mr. Bero’s Analysis and Conclusions Regarding the Avantec Products Are Unreliable

Mr. Bero considered Novozymes’ sales of Avantec[®]—a product that does not contain phytases—to be a key factor in forming his opinion regarding a reasonable royalty. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 17:10–13. Mr. Bero testified that Avantec is a “significant product with significant profits and significant sales.” *Id.* at 32:1–3. He opined that “there’s a relationship *in some fashion* between [Phytaflow and Avantec],” and specifically testified that \$91 million in Avantec sales were made to Phytaflow customers.⁶ *Id.* at 46:6–12 (emphasis

⁶ Mr. Bero testified that Novozymes’ Avantec sales totaled \$129 million from 2012 through 2014, and of that \$129 million, “91 million of that went to Phytaflow customers.” Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 28:18–24.

added), 79:24–80:3. Based on the “relation” between these products, Mr. Bero opined that sales of Avantec support an upward adjustment of the royalty rate for Phytaflow. *Id.* at 44:9–45:3, 46:6–12. But Mr. Bero’s speculation about the relationship between Avantec and Phytaflow has no support in the record. Indeed, the evidence at trial contradicts Mr. Bero’s conclusions.

Avantec is an alpha-amylase product used in liquefaction to improve ethanol yields. Dkt. No. 805, Schnurrer Dep. Tr. at 136:4–5; Dkt. No. 804, Rogers Dep. Tr. at 37:20–38:4. Mr. Rogers testified that in Avantec trials with customers, it is Novozymes’ “main goal [] to make the Avantec sell.” Dkt. No. 804, Rogers Dep. Tr. at 56:20–21. If a customer uses Avantec, Novozymes recommends that the customer also use a phytase such as Phytaflow if prior to trying Avantec, the customer *had been using an amylase product with a phytase component*. *Id.* at 54:7–55:19, 56:14–56:18; *see also* PTX 138 at NZ-USW00004093 (Avantec recommended practices sheet, stating: “Phytase should not be reduced or removed at the start of an Avantec trial. Novozymes Phytaflow can be used to replace any phytase lost by discontinuing use of other phytase containing products.”); Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 63:17–64:9 (Schnurrer) (discussing increased fouling in a plant using Avantec when it stopped using a phytase, and the recommendation in PTX 511 to “[p]ut a phytase back in”); *see also* PTX 511. In other words, a sale of Avantec may generate a sale of Phytaflow (or other phytase-containing products), and not the other way around. Dkt. No. 804, Rogers Dep. Tr. at 57:2–57:3. In fact, sales of Avantec contributed to sales of pHytOUT for U.S. Water. *See* Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 59:5–18 (Ms. Davis testifying that “a lot of those customers that buy Avantec are also buying pHytOUT, so in some ways it has even increased the sales of pHytOUT”). On cross examination, Mr. Bero admitted that his \$91 million figure for Avantec sales included Avantec customers who bought *pHytOUT*, not Phytaflow. Dkt. No. 836, Trial Tr. (Oct. 19, 2017

p.m.) at 80:22–23; 81:17–20. Thus, the evidence shows that although sales of Avantec—a key fuel ethanol enzyme—may cause increased sales of phytase, including Phytaflow, there is no evidence to support Mr. Bero’s view that Novozymes’ Avantec sales would have been at risk without use of Phytaflow in the patented method.⁷ See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) (factor six looks at “[t]he effect of selling the patented specialty *in promoting sales of other products* of the licensee” (emphasis added)); see also Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 80:12–17 (Davis) (“I don’t think th[at] Phytaflow increases sales of the Avantec product as the *Georgia-Pacific* factor No. 6 analysis requires us to consider.”).

Mr. Bero conceded he could not make the case that Phytaflow promoted sales of Avantec. See *id.* at 82:4–7 (“I can’t say specifically that Phytaflow caused Avantec sales, no.”); *id.* at 82:8–15 (“But it certainly could be the case that Avantec was promoting sales of Phytaflow, sure.”). He also conceded that he did not determine which product a customer purchases first—Avantec or Phytaflow. *Id.* at 81:21–82:3; see also *id.* at 81:5–11, 81:16–20 (conceding that some Avantec customers had purchased both pHyTOUT and Phytaflow, and some purchased just pHyTOUT). Mr. Bero’s reliance on “a relationship in some fashion” between Avantec and Phytaflow, *id.* at 46:6–12, falls far short of establishing that sales of Avantec are relevant to a royalty for use of the patented method.

Before trial, when pressed by the Court for an explanation of how, if at all, his analysis took into account Novozymes’ perspective, Mr. Bero effectively identified two reasons: Novozymes could charge more for Phytaflow than it had been, and Novozymes’ sales of

⁷ Novozymes sells Avantec to only seven fuel ethanol plants; of those seven, only two purchase Phytaflow. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 122:19–123:3.

Avantec. Dkt. No. 828, Trial Tr. (Oct. 11, 2017 a.m.) at 12:15–14:6. As discussed above, *see supra* § II.B.1.d, U.S. Water and Mr. Bero provided no evidence that the market would have supported the higher price required for Novozymes to absorb a royalty of \$8.00 per pound (or even \$5.00 per pound) on Phytaflow sales. This leaves Avantec as the sole basis for Mr. Bero’s assertion that his hypothetical negotiation floor of almost all of Novozymes’ profits is reasonable:

MR. BERO: . . . [T]hey also have a product by the name of *Avantec*. And I don’t know how much that’s been discussed here, but Avantec was – that product was a much higher volume product that when it was used, it increased fouling, as I understand it. And in the best practices for Avantec, they said to use Phytaflow.

And we analyzed the data and we found that 70% of their customers or their volume of Avantec are sold to Phytaflow customers. And the value associated with the Avantec was multiples, and multiples, and multiples. That’s one of the factors that would give them the incentive to pay more –

. . .

THE COURT: So if I get this right – now, tell me if I’m understanding this right: I get the whole idea that they got the Avantec product, so they’re going to make money on Avantec even if they sell the Phytaflow even at a loss. I don’t see any number put on that exactly. But I gather – tell me if I’ve got this right – your idea here is that Novozymes would be willing to pay eight bucks in a royalty because it could charge as much as 14 bucks a pound.

MR. BERO: Yes.

Dkt. No. 828, Trial Tr. (Oct. 11, 2017 a.m.) at 13:7–14:16. But for the reasons just discussed, the evidence at trial does not support Mr. Bero’s thesis regarding Avantec, because if anything Avantec sales drove sales of Phytaflow, and not vice versa. Mr. Bero failed to establish the kind of relationship between Avantec and Phytaflow that would support the royalty rate he advocated and that he told the Court he would establish at trial.

A reliable damages analysis requires more than speculation. Under the *Georgia-Pacific* factors, Mr. Bero was required to show that the *patented method* must promote or generate the

sales of *non-patented items*, but he provided no analysis to support such a conclusion.

Accordingly, there was no basis for Mr. Bero's upward adjustment of the royalty based on Novozymes' sales of Avantec sales.

2. Royalty Damages Should Not Exceed a 7% Royalty Rate on Phytaflow Revenue

Novozymes advocated a royalty rate of 7% of Phytaflow revenue based primarily on the testimony of its damages expert, Julie Davis. In the absence of sufficient evidence to support the jury's damages verdict, the Court should order, as a matter of law, that damages for use of the patented method may not exceed a rate of 7% of revenue.

Ms. Davis used a reliable methodology to calculate royalty damages. First, she performed an apportionment analysis of U.S. Water's pHyTOUT product offering which included, among other things, a grant of a nonexclusive license to the asserted patents. *See* DTX 2475 at 004; Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 29:9–20 (explaining that these agreements are key considerations because “[i]f you want to know what somebody should pay for a patented technology as an outcome to a hypothetical negotiation, it’s good to look at real-world negotiations to see what somebody has already been willing to pay”). Ms. Davis relied specifically on a supply agreement in which Kansas Ethanol agreed to purchase pHyTOUT from U.S. Water at a price of \$14.93 per pound, but all of U.S. Water's supply agreements were very similar and reflected a similar price. DTX 2475 at 002, 006; Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 31:1–13. As she testified, these agreements provided the customer with four components as part of the pHyTOUT product offering: (1) a supply of the pHyTOUT enzyme formulation; (2) services provided by U.S. Water; (3) a license to multiple patents, including the

'137 and '399 patents; and (4) a right to trade secrets or know-how. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 30:9–21.⁸

Using information from U.S. Water and the agreements themselves, Ms. Davis apportioned the \$14.93 to derive the value associated with each of these four components of the supply agreements. *Id.* at 31:14–39:10; *see also* Dkt. No. 808, Bly 30(b)(6) Dep. Tr. at 208:18–217:9; DTX 2157 at ¶¶ 14, 21, 24, 26–33, 78. After accounting for the enzyme product formulation supply, the services, the trade secrets, and unasserted patents, Ms. Davis concluded that the portion of the \$14.93 selling price attributable to the asserted patents is \$1.08, or 7% of the total selling price. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 39:3–40:2.

In forming her opinion regarding a reasonable royalty, Ms. Davis also considered two comparable patent licenses between competitors in the enzyme industry—one of which was for the very technology required to produce the phytase enzyme used in Phytaflow and in at least one version of U.S. Water's pHyTOUT product—and a court judgment setting a reasonable royalty after a determination of infringement on a patent related to alpha-amylases for use in the fuel ethanol industry. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 40:10–45:13. The royalties in these licenses were all structured as a percentage of net sales. *Id.* at 42:9–21, 43:5–15, 44:23–45:10. They ranged from 2% of sales for the first two licenses, up to 20% of sales for the reasonable royalty judgment. *Id.* at 41:19–21, 42:24–43:4, 45:6–10. As Ms. Davis explained, this 20% was “the highest running royalty rate that [she's] seen in the fuel ethanol industry,” and was for an enzyme that, unlike phytase, is essential for the production of fuel ethanol. *Id.* at

⁸ Novozymes' Phytaflow product offering includes similar components. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 51:19–52:12, 53:8–13 (Ms. Davis testified that Phytaflow incorporates multiple technologies separate from U.S. Water's patents, and concluded that “there's a whole lot more involved in Phytaflow and the sales of Phytaflow than just the use of a patented technology”).

45:4–13; *see also id.* at 83:16–84:3 (explaining why this judgment is relevant to the hypothetical negotiation here); Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 30:20–22 (Bero admitting that royalties are typically based on selling price).

Ms. Davis also considered the limited nature of the improvement covered by U.S. Water’s patents. U.S. Water did not invent phytases, Dkt. No. 814, Trial Tr. (Oct. 10, 2017 p.m.) at 21:9–10, nor did U.S. Water invent the use of phytases in fermentation or in the wet milling process, as those processes were already in the public domain, *see* Dkt. No. 830, Trial Tr. (Oct. 16, 2017 a.m.) at 69:8–20 (Kohl). The evidence showed that the asserted patents claimed at most an incremental improvement over the prior art. As the Court found before trial, 6 of the 7 claim limitations of the asserted patents are expressly disclosed by the prior art. *See* Dkt. No. 833, Trial Tr. (Oct. 17, 2017 a.m.) at 143:9–13 (instructing the jury on this point). The only limitation not expressly taught in the prior art is the result of phytase acting on phytic acid salts, i.e., reduction of the formation of phytate deposits. *Id.*

Finally, Ms. Davis considered the fact that plants may opt to use non-phytase alternatives. Dkt. No. 819, Trial Tr. (Oct. 20, 2017 a.m.) at 45:14–46:2 (noting that “less than half of the 200 plants at any one time are using either Phytaflow or pHytOUT”). And she took into account the fact that the relationship between U.S. Water and Novozymes is not just simple competition in a two-player market. *Id.* at 46:3–9. As of the date of the hypothetical negotiation, U.S. Water was purchasing Novozymes’ own phytase to use in its product. *Id.* at 46:10–17; *see also* Dkt. No. 823, Trial Tr. (Oct. 13, 2017 a.m.) at 147:4–18 (Mr. Rogers testifying regarding Ronozyme P-(L)); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 155:26–156:6 (Mr. Bly testifying that U.S. Water’s pHytOUT XP product contained Ronozyme P-(L)). U.S. Water faced competition not just from Novozymes or from non-phytase-containing alternatives, but also from at least

Genencor's Distillase SSF+ blended phytase-amylase product. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 46:21–48:12. Ms. Davis further concluded from the U.S. Water and Novozymes sales data and U.S. Water's own evidence that Novozymes expanded the market to plants that U.S. Water either had not reached or was unable to reach. *Id.* at 48:13–50:7.

Unlike Mr. Bero, Ms. Davis grounded her analysis in the facts and the law. A running royalty of 7% of Phytaflow sales revenue is reasonable. As a matter of law, damages should not exceed that amount.

III. IN THE ALTERNATIVE, NOVOZYMES IS ENTITLED TO A NEW TRIAL ON DAMAGES OR REMITTITUR

The jury awarded U.S. Water almost \$7.6 million in damages. That award should be set aside and a new trial held on damages if for no other reason than that Mr. Bero should not have been allowed to testify at trial. But even setting that evidentiary error aside, the jury's award is grossly excessive, representing approximately 80% of Novozymes' total revenues on Phytaflow. The excessive nature of the award is evident from the two comparable industry licenses introduced at trial, which set the royalty rate at a mere 2% of revenue, and from evidence that a 20% royalty is the highest known in the fuel ethanol industry. The jury's outsized award was likely skewed by the excessively high "starting point royalty range" Mr. Bero advocated, combined with the jury's exposure to Novozymes' significant revenues for Avantec. For these reasons, Novozymes asks that the Court conditionally grant a new trial as to damages unless U.S. Water agrees to remit \$6,922,474 of the damages award—the portion of the award that exceeds 7% of Phytaflow revenues.

A. Legal Standard for a New Trial

A Rule 59 motion may raise "procedural issue(s) not unique to patent law," in which case the law of the regional circuit governs. *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339,

1361 (Fed. Cir. 1999); *accord Leader Techs., Inc. v. Facebook, Inc.*, 678 F.3d 1300, 1305 (Fed. Cir. 2012) (reviewing denial of motion for a new trial under regional circuit law). In the Seventh Circuit, a motion for a new trial under Rule 59 is directed to the discretion of the Court, which may grant a new trial on any issue if “the verdict is against the weight of the evidence, the damages are excessive, or if for other reasons the trial was not fair to the moving party.” *Shick v. Ill. Dep’t of Human Servs.*, 307 F.3d 605, 611 (7th Cir. 2002) (quotation omitted); *see also Tullis v. Townley Eng’g & Mfg. Co.*, 243 F.3d 1058, 1066 (7th Cir. 2001). To obtain a new trial based on an evidentiary error, that error must have had “a substantial influence over the jury” such that “the result reached was inconsistent with substantial justice.” *Shick*, 307 F.3d at 611. An evidentiary error satisfies that standard “if a significant chance exists” that the error “affected the outcome of the trial.” *Id.*

However, in analyzing a request for a new trial on patent damages, “Federal Circuit law [applies] to substantive and procedural issues pertaining to patent law.” *Whitserve*, 694 F.3d at 26 (quoting *Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc.*, 609 F.3d 1308, 1318 (Fed. Cir. 2010)). The district court must “scrutinize the evidence carefully” to ensure that “substantial evidence” supports the jury’s verdict. *Id.*

B. The Jury’s Damages Awarded Is Based on Evidence that Should Have Been Excluded

As a matter of law, U.S. Water failed to present reliable evidence as to the damages to which it is entitled. For the reasons described above, Mr. Bero’s testimony should have been excluded, as it lacked the reliability and foundation necessary to form an expert opinion upon which a damages award can be based. *See supra* § II.B.1; *see also* Dkt. No. 462 (Novozymes’ MIL No. 3). And without Mr. Bero’s testimony, there simply is no evidence to support the jury’s damages verdict to the extent it exceeds the 7% royalty rate to which Novozymes’

damages expert, Ms. Davis, testified. For this reason alone, Novozymes is entitled to a new trial absent U.S. Water’s acceptance of a remittitur. *See infra* § III.D.

C. The Jury’s Damages Award Is Excessive

The jury awarded damages of \$7,582,966. This number is approximately \$5.06 per pound of Phytaflow sold, and accounts for about 80% of Novozymes’ total revenue. Either way, this damages award is grossly excessive.

The jury’s award falls within Mr. Bero’s contemplated “starting point royalty range” of \$5 to \$10 per pound. But that range *starts off* excessively high. *See supra* § II.B.1. As of the time of the hypothetical negotiation, the \$5 floor represented nearly all of Novozymes’ Phytaflow profits, and did not account for Novozymes’ position in the negotiation—a basic requirement of a reasonable royalty award. Dkt. No. 828, Trial Tr. (Oct. 11, 2017 a.m.) at 11:5–13 (Court explaining that “the hypothetical negotiation analysis has to reflect the perspective of the infringer” as well as the patentee). Although “an infringer’s net profit margin is not the ceiling by which a reasonable royalty is capped,” and there are circumstances that could warrant a royalty rate equal to or greater than an infringer’s profits, such circumstances are not present here. *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d 1336, 1346 (Fed. Cir. 2013); *see also Rite-Hite*, 56 F.3d at 1577 (Nies, Archer, Smith, & Mayer, JJ., dissenting-in-part) (“Although this court has sanctioned royalty awards that exceeded the infringer’s actual net profits, we have done so only when there was evidence that the infringer actually anticipated greater net profits.”) (collecting cases). U.S. Water has not shown that the market could withstand the higher prices Novozymes would have to charge to retain a profit—indeed, numerous U.S. Water witnesses testified that fuel ethanol plants are sensitive to phytase price. *See supra* § II.B.1.d.

Mr. Bero also justified his royalty rate floor by arguing that Novozymes needs Phytaflow to drive sales of its substantially more profitable Avantec product. Dkt. No. 828, Trial Tr. (Oct. 11, 2017 a.m.) at 13:16–17 (arguing to the Court that Novozymes’ revenue from Avantec “was multiples, and multiples, and multiples” of that from Phytaflow). He testified during the damages phase that Novozymes received \$129 million in revenue from Avantec sales over a three-year period, while sales of Phytaflow over a four-year period were less than a tenth of that. Dkt. No. 836, Trial Tr. (Oct. 19, 2017 p.m.) at 28:18–24; Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 22:10–13. But as discussed in § II.B.1.e *supra*, U.S. Water did *not* establish that sales of Phytaflow drove sales of Avantec. Accordingly, Mr. Bero’s testimony regarding Novozymes’ Avantec revenues served only to skew the jury’s perspective toward a much higher damages award than it could or would have contemplated had it never been exposed to that number in the first instance. *See LaserDynamics*, 694 F.3d at 68 (observing that where damages should have been based on the value of a patent feature, disclosure to the jury of overall product revenue “cannot help but skew the damages horizon for the jury,” and affirming grant of a new trial on damages (quoting *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1320 (Fed. Cir. 2011))).

That the jury’s damages award is excessively high is evidenced by the comparable licenses introduced at trial. *See supra* § II.B.2. Ms. Davis testified regarding two such licenses in the fuel ethanol industry, both having royalty rates of *2% of revenue*. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 41:19–21, 42:24–43:4. The damages awarded here equate to *80% of revenue*, dwarfing these comparable licenses 40-fold. Ms. Davis acknowledged a reasonable royalty rate of 20% of revenue for an alpha-amylase product in the fuel ethanol industry, awarded by a court after the product was found infringing at trial. *Id.* at 43:16–44:11. But not only is the alpha-amylase enzyme—unlike phytase—essential to fuel ethanol production, Ms. Davis testified that

this 20% royalty was the largest she had ever seen in this industry. *Id.* at 44:15–22, 45:4–13.

Yet the royalty rate awarded here is four times higher than this “largest ever seen” award. The evidence does not support this excessively large damages award. *See supra* § II.B; *see also Wordtech Sys.*, 609 F.3d at 1319–22 (reversing denial of Rule 59 motion and remanding for a new trial on damages after noting, *inter alia*, that the jury’s effective royalty rate was far higher than any license introduced into evidence).

D. The Court Should Order Remittitur

Where a damages award is excessive, as here, the Court may “allow [the] plaintiff the option of agreeing to a remittitur in a specified amount.” *Oiness v. Walgreen Co.*, 88 F.3d 1025, 1030 (Fed. Cir. 1996); *see also* 11 Charles A. Wright et al., *Fed. Practice & Procedure Civil* § 2815 (3d ed. 1998). In calculating the amount to be remitted, the Federal Circuit follows the “‘maximum recovery rule,’ which requires that the determination be based on the highest amount of damages that the jury could properly have awarded based on the relevant evidence.”

Unisplay, 69 F.3d at 519. Here, as described in § II.B.2 *supra*, the maximum reasonable royalty award supported by the evidence presented at trial is 7% of revenue on Phytaflow sales. This sum totals \$660,492 on the sales through the end of May 2017, as Ms. Davis testified. Dkt. No. 819, Trial Tr. (Oct. 20, 2017) at 22:10–15. Novozymes accordingly requests that the Court ask U.S. Water to accept a remittitur of any award in excess of this amount.⁹ *See Fox v. Hayes*, 600 F.3d 819, 846 (7th Cir. 2010) (finding “a remittitur can resolve the overcompensation problem” without wasting the time and expense of the first trial); *Unisplay*, 69 F.3d at 519 (“[T]he use of remittitur enables parties to avoid the delay and expense of a new trial when a jury’s verdict is

⁹ The jury’s award of \$7,582,966, less \$660,492, is \$6,922,474. This is the amount U.S. Water should be asked to remit for Phytaflow sales through the end of May 2017.

excessive in relation to the evidence of record.”). Should U.S. Water decline, then Novozymes requests a new trial as to damages.

IV. CONCLUSION

For the foregoing reasons, Novozymes respectfully requests that this Court grant its motion for judgment as a matter of law that damages should not exceed a reasonable royalty of 7% of Novozymes’ Phytaflow sales. In the alternative, Novozymes requests that the Court conditionally grant a new trial as to damages unless U.S. Water accepts a remittitur of any award in excess of a 7% reasonable royalty rate.

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Respectfully submitted,

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